of determining the longitude of any other point in that circle, from its latitude.

The third paper was entitled, "Hygrometrical Observations made on board His Majesty's surveying vessel Ætna." Communicated by Captain Beaufort, R.N., F.R.S.

These observations extend from the 27th of March to the 6th of July, 1834, and were made daily at 8 o'clock A.M., at noon, and at 4 o'clock P.M. They comprise the height of the barometer, the dew-point, degrees of dryness on the thermometrical, and of moisture on the hygrometrical scales, the elasticity of the vapour, and the number of grains of vapour in a cubic foot; with occasional remarks. A second series is also given, exhibiting the progress of solar radiation.

The fourth was a "Meteorological Register, from the 1st of January to the 1st of November, 1834," by Mr. Edward Barnett. Communicated by Capt. Beaufort, R.N, F.R.S.

These observations, made during a voyage across the Atlantic, relate chiefly to the temperatures of the air, and of the surface of the sea.

The fifth was a "Meteorological Register, kept on board His Majesty's Ship Thunder, between the 1st of January and the 30th of June, 1834," by R. Owen, Commander. Communicated by Captain Beaufort, R.N., F.R.S.

These observations relate to the state of the weather, the direction and force of the wind, and the heights of the thermometer, and of the marine and oil barometers.

May 14, 1835.

JOHN WILLIAM LUBBOCK, Esq., Vice-President and Treasurer, in the Chair.

A paper was read, entitled, "An Account of the Water of the Well *Zem-zem*, with a qualitative analysis of the same by Professor Faraday"; in a letter from John Davidson, Esq., to the Secretaries, and communicated by them.

The author having, during his stay at Jedda, the port of Mecca, succeeded in procuring about three quarts of the water from the well of *Zem-zem*, to which the Mahomedans ascribe a sacred character and extraordinary virtues; and wishing to preserve this water for the purposes of analysis, had the can in which it was contained carefully sealed; but, unfortunately, on its arrival in the London Docks, the can, notwithstanding the directions written on it, was opened, and the gas with which it was highly charged, and by which it held in solution a very large quantity of iron and other matters, was allowed to escape. The precipitate thrown down, in consequence of the loss of this gas, was found, by Professor Faraday, to consist of carbonate of protoxide of iron in the enormous proportion of 100·8 grains to the imperial pint of water. The clear fluid was neutral, and contained much muriate, and a little sulphate, but no carbonate; together with a little lime, potash, and soda. There was also found an alkaline ni-